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Chromatic Relations in late-Renaissance English Repertoire: Further Theoretical Considerations

Relações cromáticas no repertório renascentista inglês tardio: considerações teóricas complementares

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Abstract: This article continues the theoretical study of chromatic relations in late-Renaissance English polyphony. It refines definitions based on Eleanor Chan's (2024) semiotic-historical survey and Eduardo Solá Chagas Lima's (2025) analytical framework. It expands classifications of "true" relations (TR) and false relations (FR), situating them within a broader taxonomy of chromatic relations. Through detailed analyses of chromatic relations in works by William Byrd, the article identifies local and global components that shape chromaticism. Local components include the interaction of notated and performative *musica ficta*, the intentional use of TR/FR, and immediate/delayed concurrence in synchronous false relations (SFR). Global components, in turn, include the participation of chordal/non-chordal tones and framed/superimposed chromatic relations. The present study also advances harmonic progressions modelled with *Tonnetz*-based principles, which reveal the interplay between melodic chromatic motion and triadic exchanges in modal counterpoint. By extending and adapting Renaissance rhetorical traditions and Neo-Riemannian analytical tools, the article demonstrates that chromatic relations are not merely ornamental dissonances but integral expressive devices with structural and rhetorical functions. While grounded in English repertoire, the findings suggest broader applications to other repertoires and traditions, underscoring the need for historically sensitive yet flexible theoretical approaches to Renaissance chromaticism.

Keywords: Chromatic relation. False relation. Chromaticism. William Byrd. English Renaissance.

Resumo: Este artigo dá continuidade ao estudo teórico das relações cromáticas na polifonia inglesa do final do Renascimento. O artigo refina definições com base na exploração semiótico-histórica de Eleanor Chan (2024) e no aparato analítico de Eduardo Solá Chagas Lima (2025). O artigo expande as classificações de relação "verdadeira" (TR) e relação falsa (FR) situando-as dentro de uma taxonomia mais ampla de relações cromáticas. Por meio de análises detalhadas das relações cromáticas em obras de William Byrd, o artigo identifica componentes locais e globais que moldam o cromatismo. Componentes locais incluem a interação de *musica ficta* notada e performática, o uso intencional de TR/FR e a concomitância imediata/retardada em falsas relações síncronas (SFR). Aspectos globais incluem a participação de tons harmônicos/não-harmonônicos e relações cromáticas enquadradas (*framed*) e sobrepostas. Este estudo também explora progressões harmônicas modeladas com princípios baseados no *Tonnetz*, o que revela a interação entre o movimento cromático melódico e câmbios triádicos no contraponto modal. Ao estender e adaptar tanto as tradições retóricas renascentistas quanto as ferramentas analíticas neo-Riemannianas, o artigo demonstra que as relações cromáticas não são meramente dissonâncias ornamentais, mas sim dispositivos expressivos integrais com funções estruturais e retóricas. Embora baseadas no repertório inglês, essas discussões sugerem uma aplicação mais ampla dessa metodologia a outros repertórios e tradições, ressaltando a necessidade de abordagens teóricas historicamente sensíveis, porém flexíveis, ao cromatismo renascentista.

Palavras-chave: Relação cromática. Relação falsa. Cromatismo. William Byrd. Renascimento inglês.

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1. Introduction

Following two recent scholarly investigations, this article offers further insight into chromatic relations. The first, a thorough study by Eleanor Chan (2024), explores the musicological implications of the false relation for the English late Renaissance. "False relation" is the music-theoretical term that currently denotes one or more types of dissonant relationships between two or more polyphonic voices. These false relations (FR) are a particularly recurrent mode of chromaticism employed in this repertoire. Chan's (2024) book explores the FR as an Early Modern linguistic phenomenon, which the author approaches from her niche purview as a historian of symbols and semiotician. While the volume significantly contributes to musicological scholarship on FRs, it provides a limited appraisal of the compositional device's theoretical underpinnings. FRs can denote various dissonances across different polyphonic voices, and Chan (2024) accounts for these more generally as analogous compositional devices.

The second investigation, a theoretical study by Eduardo Solá Chagas Lima (2025), focuses specifically on chromatic relations, situating FRs within a broader compositional phenomenon. This article places FRs and true relations (TR) under a broader category of chromatic relations, suggesting a clearer distinction between various manifestations of this compositional device in the repertory. This definitional investigation, although primarily theoretical in scope, also accompanies a comprehensive analysis of chromaticism as a rhetorical figure in the *musica poetica* tradition.

While these two investigations provide a significant initial mapping of the chromatic relation in the English Renaissance—both musicological and theoretical—they only begin to unveil a chromatic phenomenon that continues to pose complexities for scholarship to address. Chan's (2024) generalist book is probing from an iconographical standpoint, yet it lacks a more profound theoretical analysis of the FR. In turn, Solá Chagas Lima's (2025) article, while focused on scope and detailed in analytical methodology, gives but an initial theoretical apparatus with which to approach chromaticism in the late 1500s. Despite the vast body of analytical examples in the latter—taken chiefly from William Byrd's *Ne irascaris Domine/Civitas sancti tui* and Orlando Gibbons's *The Silver Swan*—several theoretical and compositional aspects of chromatic relations remain uncovered. In addressing some of these aspects, this article discusses local and global theoretical components involving chromatic relations, which have a salient impact on the immediate harmony and the overarching polyphonic texture.

Solá Chagas Lima (2025) argues that the exploration of chromaticism in modal counterpoint must have a tentative quality, in that the teleological poise of extant analytical endeavours, grounded in tonality, tends to obscure the nuances of modal counterpoint. As research on chromaticism in late-Renaissance polyphony unravels, chromatic relations invite analysts to consider elements frequently taken for granted in modern theoretical approaches. Modern analytical outlooks are heavily concerned with the centrality of the tone and, with an approach deployed retroactively to pre-modal repertoire[1], often fail to account for its unique idiosyncrasies. For example, current approaches may ignore issues of historical performance practice, the horizontality of Renaissance

[1] For a robust discussion on modality in William Byrd's music, see Long (2023).

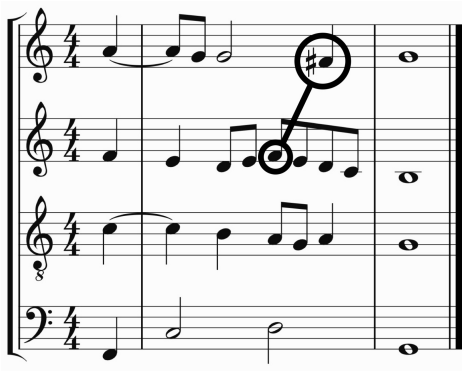
vocal polyphony, and the triadic priority in harmony during this time. However, when considered in its modal compositional and historical context, chromatic relations present themselves under a completely novel light. This article reimagines the chromatic relation by extending initial theoretical propositions in extant scholarship and adapting/re-adapting current model understandings of tonal progression, thus shedding light on modal chromatic relations via a historically informed angle.

2. Summarized Historical Context and Review of Methodology

This article uses Solá Chagas Lima's (2025) musicological findings and theoretical framework as the starting point for further considerations. These findings are worth recapitulating here as the basis for new contributions. Solá Chagas Lima (2025, p. 5) argues that extant theoretical definitions of the term "false relation" regard it as essentially different from other forms of chromaticism. Nevertheless, these definitions are inconsistent and often presentist, thus failing to account for the term's historical complexity and varied musical presentations. For instance, the false relation (FR) appears under many interchangeable terms from Early Modernism to today—such as cross-relation, harmonic cross-relation (Smith 2023, p. 90), "English" clash, and *mi contra fa*—but these are not necessarily synonymous with one another, and definitions vary between scholars and sources. In fact, they occasionally denote conflating dissonant phenomena. Moreover, in the *musica poetica* tradition, FRs were classified along with other "unusual" dissonances under broader rhetorical or expressive concepts, such as *parrhesia* or *licentia* (Bartel 1997). Historical terminology is often vague, hindering precise alignment with modern classifications.

A prominent and recognizable form of FR, especially in English Renaissance music, is the "English cadence," which often involves a near-concurrent use of a modal shift, involving the juxtaposition of a minor and major third in adjacent chords (Ex. 1). William Byrd and Thomas Tallis used this compositional device extensively in their vocal polyphony as a means for rhetorical emphasis on the text (Smith 2016, p. 113–114; Smith 2023, p. 84, 89–90, 175), despite a growing distaste for this musical mannerism in the Early Modern period (Maniates 1979, p. 168). Chan (2024, p. 193) calls it a "taste for acrid false

relations and irregular suspensions", referring to the style of writing learned from Londoner composers in the mid-1500s and crystallized as an idiom and mannerism in the broader English repertoire. Thomas Morley, chiefly, denounced it as outdated (Solá Chagas Lima 2025, p. 16). While especially prevalent in English repertoire, the FR appears throughout Europe from the late Middle Ages through the Baroque and beyond, including the works of Guillaume de Machaut, Josquin des Prez (Desprez), Orlando Lassus, and Henry Purcell.



Example 1: Morley's example of the English cadence (c.1600). Source: Morley (c. 1600 *apud* Chan 2021, p. 18; and Solá Chagas Lima 2025, p. 4).

Composers use FRs to underscore emotional or symbolic elements, such as sadness or desolation. These instances usually coordinate with a rhetorical intent to underscore textual meanings through word painting.

Authoritative sources offer incomplete or conflicting definitions, and recent scholarship has not adequately clarified or categorized FRs as a distinct compositional device. Particularly, FRs are not adequately understood as belonging to a more overarching theoretical phenomenon: chromaticism in general. In order to mitigate this terminological and, thus, theoretical challenge, Solá Chagas Lima (2025) develops a new terminological hierarchy (Fig. 1) for understanding chromatic relations in general. The author divides chromatic relations into two overarching subcategories: (1) chromatic pitch alterations within a single voice (a "true", melodic relation, or TR) and (2) chromatic pitch alterations across different voices (a "false" relation, or FR). TRs occur within one melodic line and can be direct (dTR), featuring adjacent chromatic pitches, or indirect (iTR), featuring chromaticism interspersed with connecting harmonies. Though common in music generally, TRs may occur less frequently than FRs in the repertoire studied.

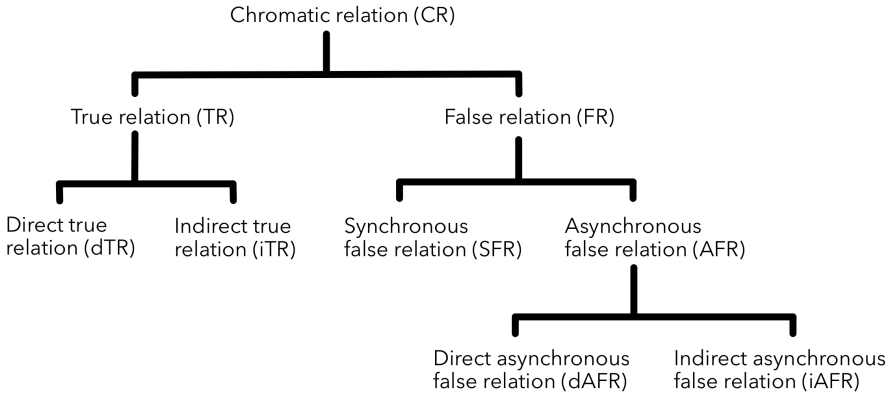


Figure 1: The flowchart shows various types of TRs and FRs stemming from the fundamental chromatic relation. Source: Solá Chagas Lima (2025, p. 19).

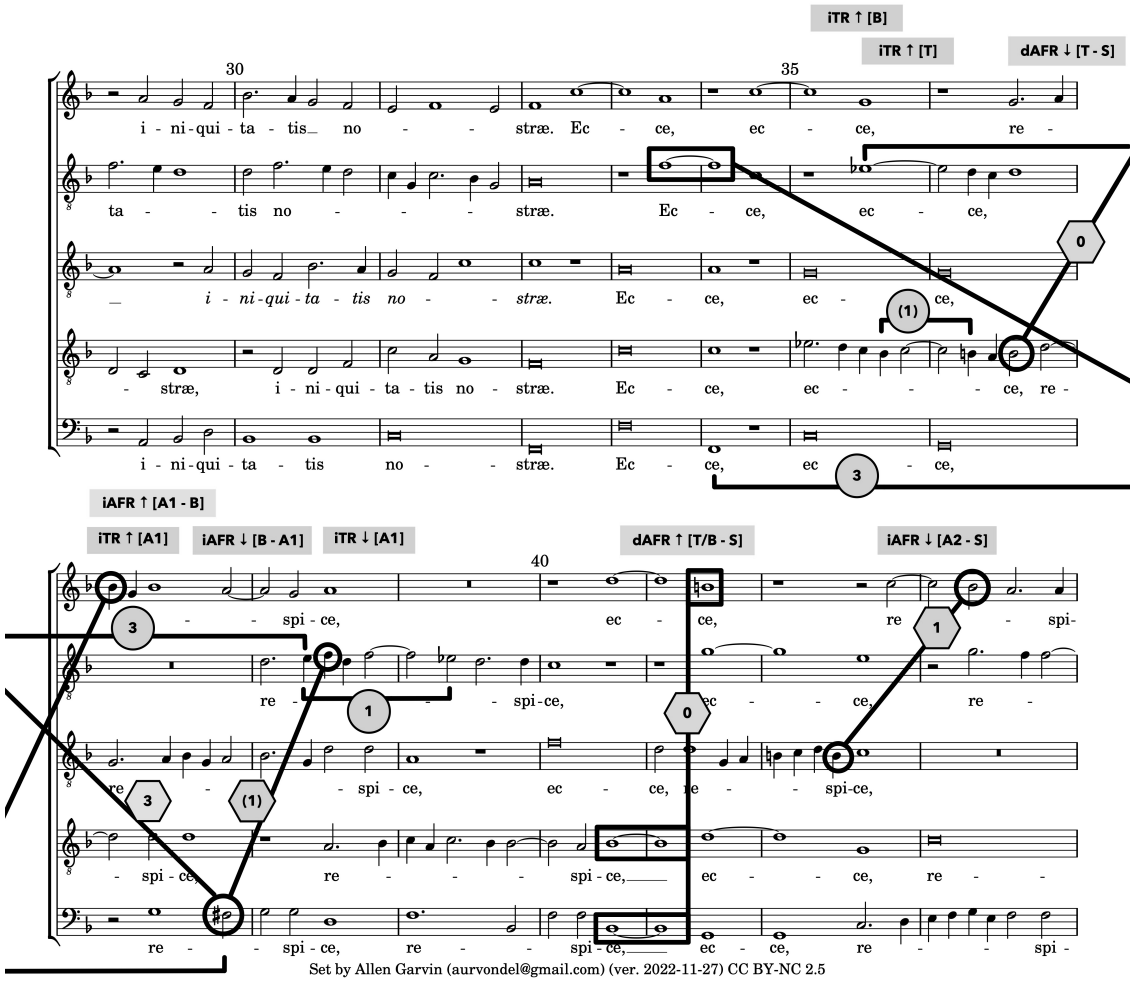
FRs are of a more complex nature, as they require at least two polyphonic voices, since each of the chromatic pitches appears in a different voice. FRs can be synchronous (SFR), where pitches overlap harmonically (simultaneously) in time, creating a harmonic clash; or asynchronous (AFR), where pitches occur in sequence. As in TRs, AFRs can also be direct (dAFR), with immediately successive chromatic pitches, or indirect (iAFR), featuring chromaticism interspersed with one or more pitches, harmonies, or a combination.

Thus, the different versions of FR fall into a dynamic continuum (Fig. 2), which considers variations in how this compositional device is presented. For instance, on one end of the spectrum, false relations can be perfectly simultaneous (e.g., SFRs) and devoid of a modulatory function. Conversely, on the other end, they can entail purely modulatory chromaticism or involve larger modulatory spaces (e.g., iAFRs).

Figure 2: A continuum depicting the fluid relationship between different types of FR. Source: Solá Chagas Lima (2025, p. 23).

Solá Chagas Lima (2025) uses diagrams and annotations (vertical, diagonal, and horizontal lines) to mark chromatic relations on the score, connecting chromatic pitches and identifying their nature. The framework

recognizes chromatic relations as typically involving three-pitch units, in which the chromatic gesture encompasses a motion "to" and "from" a chromatic alteration. The framework considers the direction of chromaticism (ascending/descending), range distance (octave changes), and melodic prolongation of chromatically altered scale tones. Moreover, that author offers harmonic considerations—such as the number and type of connecting harmonies—as key to understanding the role and frequency of chromatic relations. Ex. 2 shows various types of chromatic relations in a passage from Byrd's *Ne irascaris Domine/Civita sancti tui*, using the framework and labeling system described in Solá Chagas Lima (2025).



Example 2: William Byrd – Ne irascaris Domine/Citivitas sancti tui, mm. 29–43. Score analysis with the framework described in Solá Chagas Lima (2025). Source: Byrd 2022 *apud* Solá Chagas Lima 2025, p. 37.

Although several of the labels above should be read in the contexto of the referenced article (Solá Chagas Lima 2025), they were reproduced here to demonstrate the analytical framework in question. For example, this passage contains indirect true relations (iTR) and direct/indirect asynchronous false relations (dAFR and iAFR). The numbers in the hexagons/circles correspond to the triadic connecting harmonies separating any two chromatic pitches. The labels above the staff offer a summary of the chromatic relation. The upward and downward arrows indicate the melodic direction of the chromatic motion (e.g., ascending from F-natural to F-sharp = ↑; or descending from E-natural moving to E-flat = ↓).

The following sections of this article use this basic analytical methodology as a theoretical bedrock, focusing primarily on direct-asynchronous and synchronous chromatic relations (e.g., dTR, dAFR, and SFR) to discuss additional "local" and "global" elements that impact false relations. The priority for direct chromatic relations was an analytical choice based on their arguably more conspicuous musical effect and rhetorical significance than their indirect counterparts.

3. Overview of New Contributions

In light of the need for further contributions on the investigation of chromatic relations, this article explores novel propositions stemming from the methodology summarized above, seeking to extend, expand, and refine its initial theoretical tenets. Firstly, Section 4 explores the *Tonnetz* as an alternative visual scheme to contemplate the triadic priority of modal counterpoint. Sections 5 through 9 account for further variations in the presentation of chromatic relations in general. The first three of these sections (5–7) examine three local components—where the term *local* denotes theoretical elements that with immediate melodic implications—namely, the notated versus the performative employment of *musica ficta*, the deliberate and intentional use of true relations TRs instead of FRs, and immediate versus delayed concurrence of SFR. Tab. 1 shows a comprehensive list of these elements, focusing on those accounted for in previous scholarship and further nuances discussed in this article.

Component Type	Solá Chagas Lima (2025)	New Contributions
Local Components:	**Nature:** • True (TR) • False (FR) **Concurrence:** • Synchronous (SFR) • Asynchronous (AFR) **Melodic direction:** • Ascending • Descending **Voicing or polyphonic placement (especially if FR)** **Range distance (in absolute octaves)** **Melodic proximity (harmonic/temporal distance) (if TR or AFR):** • Direct (dTR, dAFR) • Indirect (iTR, iAFR) **Number of connecting harmonies (if iTR or iAFR)**	**Concurrence:** • Synchronous (SFR) • Immediate SFR concurrence • Delayed SFR concurrence
Global Components:		**Harmonic integration summary (*Tonnetz*):** • Graphic • Chord progression • Melodic direction • Analytical labels **Harmonic participation:** • Chordal tones • Non-chordal tones
Global Components:		**Superimposed and chained** **Framed**

Table 1: The table shows the components discussed in Solá Chagas Lima (2025) and the new contributions fostered in the present article. The latter appear in the right-most column. Source: Author.

The final two sections (8–9) address global nuances in harmonic progressions, chord participation, and the compounding of chromatic relations into complex niches, which significantly impact the polyphonic and harmonic fabric.

4. A *Tonnetz*-Based Approach to Modality in Byrd

The modality of Byrd's polyphony demands a theoretical model that underscores the relationship between harmonies, rather than their hierarchical role. Roman numerals can detract from the modal triadic relationship of harmonies, implying a functional exchange between the "tonic" chord and adjacent harmonies. Hence, this article uses an alternative system based on Swiss polymath Leonhard Euler's *Tonnetz*. Although the original *Tonnetz* was conceived in and around the same time as the gradual development of tonality, in the first half of the eighteenth century, it was conceptualized before functional harmony became an established system in the Western Germanic tradition.

Hugo Riemann popularized the *Tonnetz* in modern tonal theory in connection with functional harmony. Through his theoretical work, the *Tonnetz* was appropriated and propagated in music theory in the context of tonality. Nevertheless, this article uses the *Tonnetz* in the Riemannian sense (Cohn 1998; Hughes 2022) only insofar as it highlights harmonic exchanges between triads, rather than emphasizing harmonic functionality or a systemic hierarchy of harmonies. In the sixteenth-century polyphonic context, triads result from interweaving horizontal lines. Their "vertical" quality of harmonic function relates to horizontal activity in a more integrated manner, compared to tonal harmony of the late eighteenth and nineteenth centuries. The latter perspective has come to dominate the theoretical language available to describe harmonic exchanges and paved the way for harmonic thinking in modern tonal theory. In looking back at the *Tonnetz* as a music-conceptual byproduct of the Enlightenment, this article attempts to retrieve the modality it may have mirrored—a modality that only with time was replaced by the tonal centre. It is this modality and the direct harmonic exchanges between triads that the *Tonnetz* can underscore and bring to the forefront in the analysis of Byrd's music.

Long (2023, p. 103) points to a scholarly trend in the analysis of Byrd's music described as a "neo-modal" approach, in which the composer displays a "careful control of register and melodic climax". This perspective requires attention to recurring melodic and cadential formulas that emphasize the mode. According to this view, Byrd's modality is transitional, in that he writes polyphony around five modal niches which foreshadow a tonal structure. Perhaps this modality with a tonal "foretelling" may invite modern scholars to analyze Byrd's music as essentially tonal. However, notwithstanding the

innovations to Byrd's fin-de-siècle approach to modality, his music instills a return to the modal outlook. The *Tonnetz* model provides just the right tool as a likewise transitional model. It offers further insight into these modal niches, focusing on the triadic centres that characterize Byrd's polyphony.

The *Tonnetz* also highlights the relationship between the chromatic relation (melodic element) and the underlying harmony (harmonic element), showing the salience of the diatonic and chromatic semitone. At the same time as offering an explicit disambiguation of the "stepwise motion", the *Tonnetz* provides a clear visual tool for the harmonic progression that stepwise melodic segments involve. Fig. 3 shows the three stepwise motions common in a diatonic Renaissance melody, as combined with the three most straightforward harmonic *transformations*[2] in Neo-Riemannian theory: relative or {R}, leading tone or {L}, and parallel {P}. The chromatic augmented unison is considered in this article as a type of stepwise motion—the figurative and literal *passus duriusculus* ("painful steps") of the Early Modern period, as the music of the late Renaissance struggles to emancipate from the diatonic hexachord.

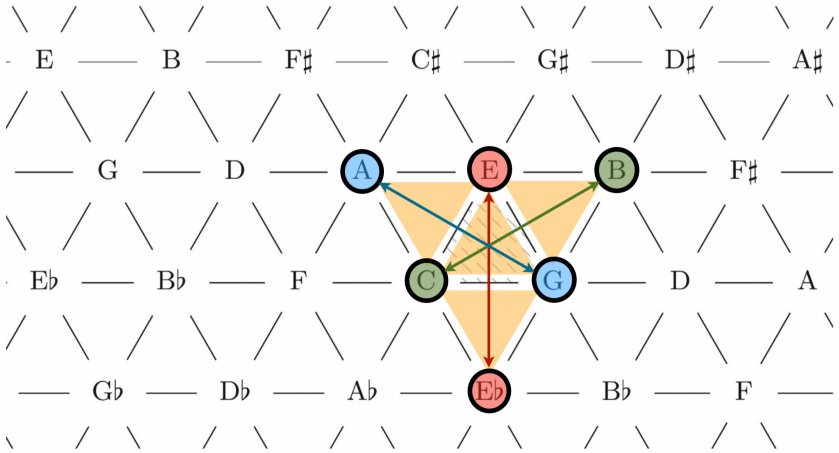


Figure 3: Three fundamental transformations in the *Tonnetz*[3] model, connecting pitches within stepwise range (ascending and descending directions). Source: Author.

[2] Neo-Riemannian theory (Cohn 1998; Hughes 2022) refers to progressions between adjacent harmonies in the *Tonnetz* as "transformations"—a concept that the present article imports loosely and in the context of Renaissance modality.

[3] The "blank" *Tonnetz* graph used in this study—which features an emphasis on the C major triad—was sourced from Konstanze Rietsch's (2024) article on triangulated surfaces.

For clarity, the visual examples below show each independent transformation as having the C major triad as its common pivot. Fig. 6–8 depict these in isolated detail. The relative transformation {R} occurs between the C major and A minor triads, connecting the whole tone (major second) G–A, depicted in blue (Fig. 4). While the pitches C and E are common between the C major and A minor triads, the stepwise motion G–A must take place in order to satisfy the relative harmonic progression in its simplest form. It would be reductionist to infer that all relative transformations involve a whole tone similarly, but this motion is the minimum stepwise relationship required.

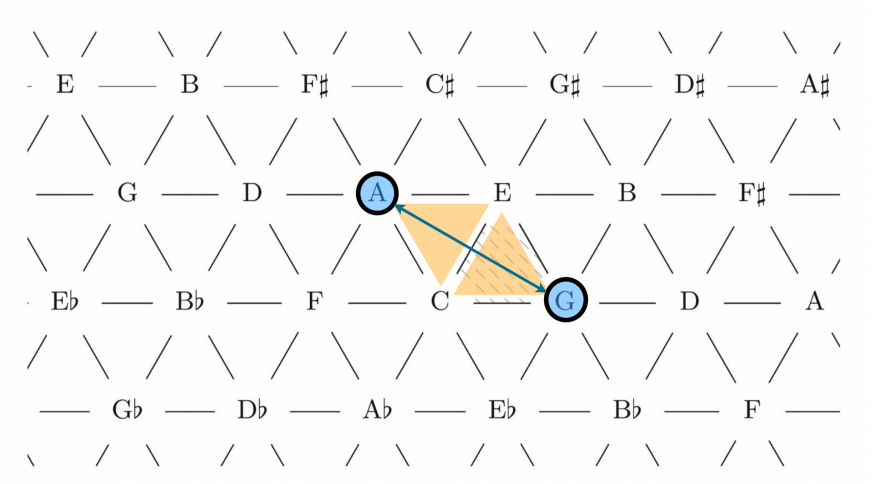


Figure 4: Relative transformation {R} between C major and A minor. Source: Author.

The leading-tone {L} transformation between the E minor–C major triadic progression connects the diatonic semitone (minor second), in green (Fig. 5). Similarly, the non-common pitches between the E minor and C major triads create the semitone B – C. The "leading-tone" transformation imports its name from its degree-scale functionality ($\hat{7}$–$\hat{1}$), to be sure, although the significance of this melodic-harmonic relationship carries alternative connotations in the Renaissance context.

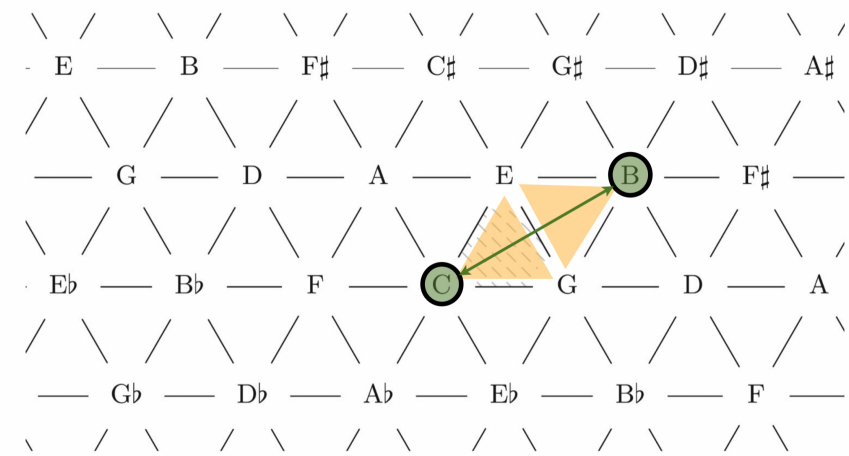


Figure 5: Leading-tone transformation {L} between C major and E minor. Source: Author.

Lastly, the parallel transformation {P} between the C major and C minor triads connects the chromatic semitone (augmented unison) E–E-flat, in red (Fig. 6). Parallel transformations are of particular interest in this article as they involve a natural chromaticism. In fact, they are frequently the progression associated with chromatic relations, as parallel transformations feature a natural chromaticism between the non-common pitches of the triads involved. Parallel transformations are also the shortest harmonic pathway in melodic chromaticism, compared to progressions that need compounded transformations to connect chromatic pitches.

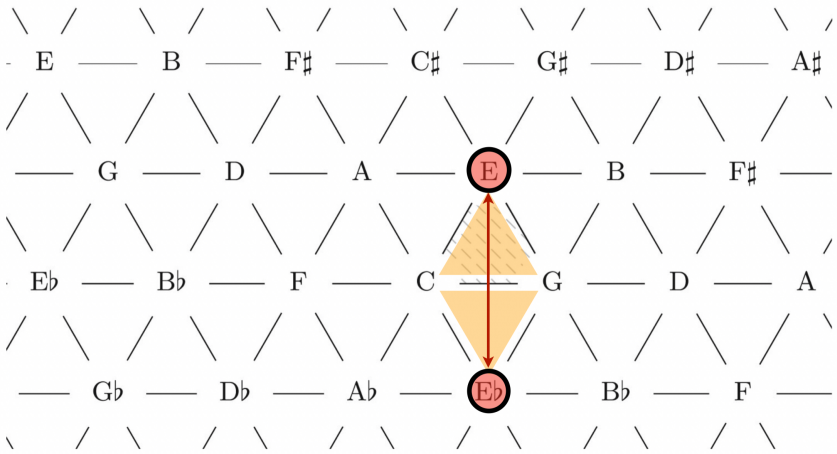
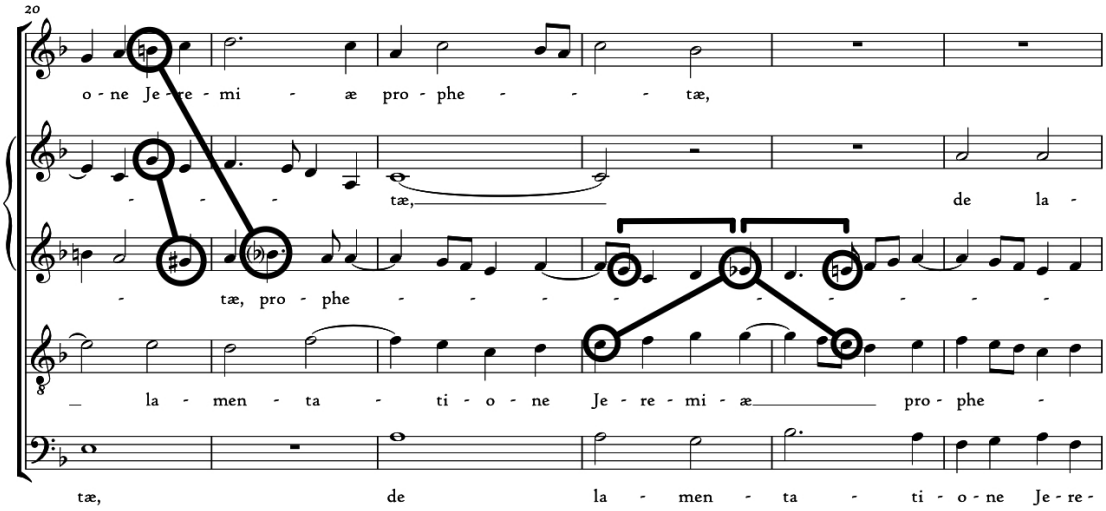


Figure 6: Parallel transformation {P} between C major and C minor. Source: Author.

Stepwise motion, including the Renaissance chromaticism, may involve more complex harmonic exchanges such as compound transformations, as some of the musical examples in this article demonstrate below. However, the instances in Fig. 4–6 depict the shortest triadic path mediating adjacent pitches separated by the interval of a second, where both the originating pitch and the final pitch are consonant within their respective triads. As suggested above, the two non-common pitches in each of these transformations must feature stepwise motion between them, regardless of the direction of the transformation: ascending or descending.

As in Neo-Riemannian theory, TRs and FRs taking place in compound transformations entail two or more transformations involving (1) the triads that contain the chromatic pitches as well as (2) any other harmonic pathways between them. Ex. 3 depicts an example of compound transformation in Byrd's *De lamentatione Jeremiae*, mm. 23–24, involving the chromatic E–E-flat motion.



Example 3: William Byrd – *De lamentatione Jeremiae*, mm. 23–24. Source: Byrd 2021, with author's annotations.

Fig. 7–9 shows the *Tonnetz*-based harmonic analysis of the passage above. First, Fig. 7 and 8 depict the two stages of the harmonic progressions with compound transformations. Fig. 7 contains the progression's first half (#1) {L – RLR – L}. Fig. 8 shows the progression's second half (#2), {LR – RPRL}—where the B-flat in the Bass line was considered a non-chordal tone in the context of the last harmony of the progression. Fig. 9 shows the complete set of compound transformations, {L – RLR – L –LR – RPRL} (#3).

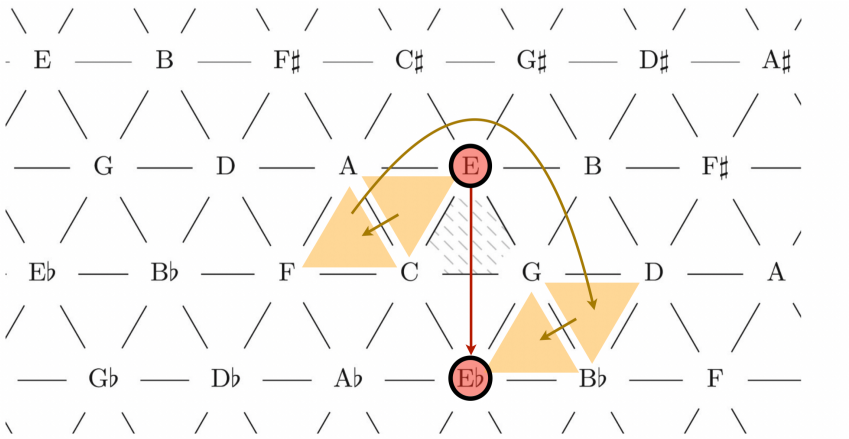


Figure 7: William Byrd – *De lamentatione Jeremiae*, mm. 23–24. *Tonnetz* model showing a complex chord progression (transformation) involved in the iTR/iAFR. First part of progression (#1). Source: Author.

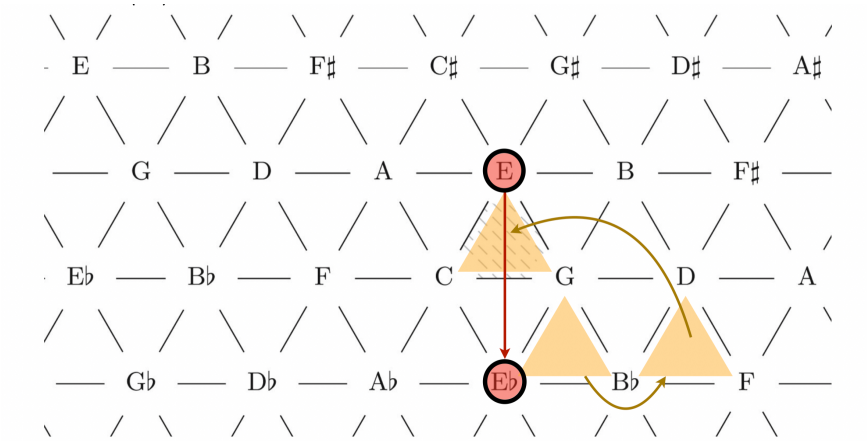


Figure 8: William Byrd – *De lamentatione Jeremiae*, mm. 23–24. *Tonnetz* model showing a complex chord progression (transformation) involved in iTR/iAFR. Second part of progression (#2). Source: Author.

The *Tonnetz* graph bears additional benefits for the analysis of chromatic relations. It allows for a better visualization of chromatic relations involving passing notes (non-chordal tones), since pitches involved in a TR or FR may be dissonant against the triadic context to which they belong. It also helps visualize the direction of the chromatic alteration (as described in Solá Chagas Lima 2025), depending on whether the chromaticism is ascending or descending (Fig. 3–6 show both harmonic directions with the doubled-headed arrows). The same holds for the direction of transformation in complex cases, such as chromatic

relations involving compound transformations. Fig. 9 exemplifies the complete progression (#3).

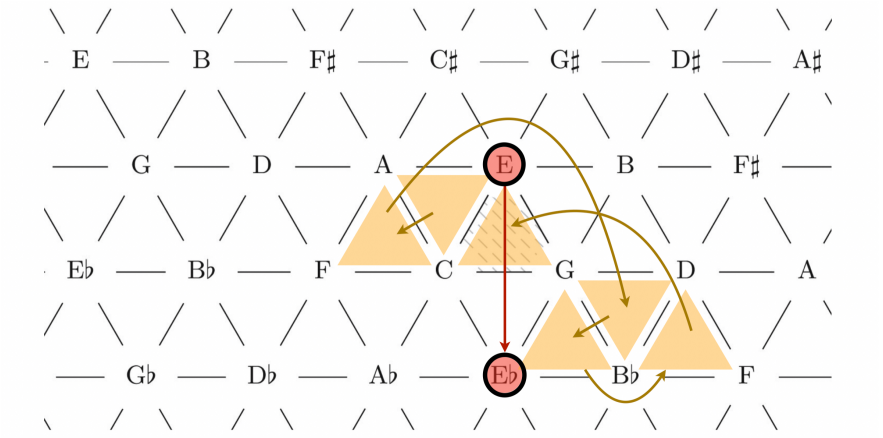


Figure 9: William Byrd – *De lamentatione Jeremiae*, mm. 23–24. *Tonnetz* model showing a complex chord progression (transformation) involved in iTR/iAFR. Complete progression (#3). Source: Author.

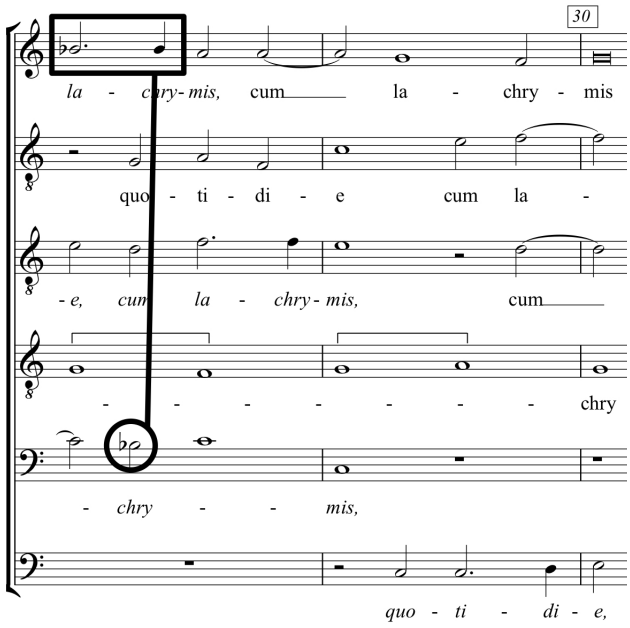
5. Local Component: Notated vs. Implied (Performative) *Musica Ficta*

Scholars bring attention to the role of historical performance practice in determining the employment of *musica ficta* in Renaissance polyphony (Benham 1977, p. 35–37; Chan 2024, p. 191–196; Duguid 2014, p. 132–135; Morehen 2003, p. 183). Particularly, Chan (2024) discusses chromaticism within the same voice and between various polyphonic voices, suggesting that the notation of *musica ficta* by means of adding accidentals is not the only source of chromatic alterations (Chan 2024, p. 183–187). The vocal practice of the time, based on diatonic solmization of the liturgical modes, permits singers to alter pitches in their independent lines to satisfy basic rules and principles of hexachord singing: *ut–re–mi–fa–sol–la*. Since a natural semitone in the hexachord occurs between pitches *mi–fa*, this relationship can only be emulated in other regions of the melody where a semitone is more fitting, albeit neither naturally occurring nor notated. For example, the *musica ficta* ("false", "fictional", "virtual" music) allows the *mi–fa* relationship to appear in unlikely scalar regions. Alterations of this type deviate from the "natural" semitones in diatonic stepwise melodic lines, which derive from the liturgical modes.

This alteration is usually desirable in passages where the *ficta* avoids tritones and other dissonances. For instance, a melodic segment *la–**fa**–la* (such as A – B–flat – A, sounding as *mi–fa–mi)*—the flattening of the upper note to create a *ficta* semitone—may be preferable to the naturally-occurring *la–**ti**–la* (A – B – A), which features a whole tone. The same holds for lower neighbouring semitones, such *as sol–**mi**–sol* (G – F-sharp – G, sounding as *fa–mi–fa)*—the sharpening of the lower note to create a *ficta* semitone—may also be preferable to the naturally-occurring *sol–**fa**–sol* (G – F – G), which likewise features a whole tone according to the unaltered hexachord. The latter alteration is especially recurrent in cadential patterns, generating a leading tone in principal and non-principal central harmonic regions. In the latter scenario, it is also plausible to assume that composers/editors may have added *ficta* to remind singers that passages resembling a melodic cadential pattern, albeit with an alternate function in the polyphonic texture, should feature a whole tone relationship rather than a semitone.

Chan (2024, p. 194) also adds the historical priority for canonic imitation between voices as compounded with solmization practice in imitative counterpoint. For instance, in imitating a motif or melodic pattern previously stated in another voice, a solmizing performer may have defaulted to emulating the same intervallic relationships when imitating at a different scale degree. This practice could have caused singers to include or subtract accidentals in addition to the already provided score indications and the general solmization conventions in place.

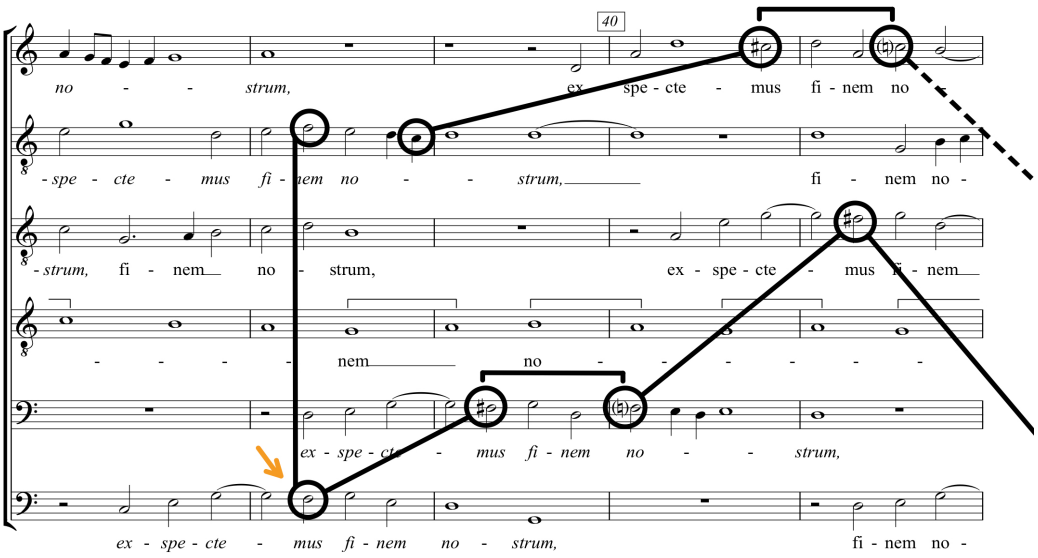
Two probing instances appear in Byrd's *Afflicti pro peccatis nostris/Ut eruas nos a malis* (mm. 28, 38). Both instances can result in an FR between the Bass and the Superius (top voice), if the former sings a half tone C – B – C (Ex. 4). In m. 28, Byrd marks a B-flat in the Tenor line in the first edition from 1591 (Byrd 2023b), suggesting an intentional avoidance of an FR against the B-flat in the Superius, which the singer may have inadvertently added as per solmization conventions.



Example 4: William Byrd – Afflicti pro peccatis nostris/Ut eruas nos a malis, mm. 28–31. Source: Byrd 2008a, with author's annotations.

In m. 30, the composer introduces a B-natural, interpreted as an iAFR against the B-flat in the Superius/Tenor (m. 28).

A similar passage occurs in m. 38, where the suspended G resolves into an F-natural in the Bassus, rather than an F-sharp (Ex. 5). Again, since Byrd does not provide *ficta* markings on the score in this case, it is possible that the performer could sing an F-sharp, inadvertently, thus creating an FR against the F-natural in the Medius. This is especially true if the Bassus performer wants to foreshadow the analogous suspension in the following bar, m. 39, where Byrd does mark an F-sharp in the first edition of the motet (1591). The B-natural is circled in m. 30 but is not connected to the previous B-flats, nor is it labeled iAFR due to more than three connecting harmonies between them. In line with Solá Chagas Lima's (2025, p. 27–29) discussion of harmonic distances, this deliberate analytical choice can be adapted depending on the analytical purpose.



Example 5: William Byrd – Afflicti pro peccatis nostris/Ut eruas nos a malis, mm. 37–41. Source: Byrd 2008a, with author's annotations

To be sure, the harmony in m. 39 suggests a more evident cadential pattern than in m. 38, thus needing the leading tone. It is possible, nonetheless, that singers would have performed an F-sharp upon reading the notation both in rehearsals and performances, particularly if they were singing from the original 1591 printed partbook (Byrd 2023b), rather than a score.

Printed partbooks became popular in the sixteenth century, featuring individual music "parts" separated by voice or instrument in small-sized volumes (Fig. 10), as opposed to choirbooks, which displayed all polyphonic parts across two pages in a larger tome (Fig. 11). The adaptation of Gutenberg's fifteenth-century printing model to music notation afforded a higher circulation of printed sheet music. The movable type technique allowed for partbooks of smaller parchment size to be printed at a cheaper cost and faster rate, offering a more practical and convenient alternative to choristers. Large choirbooks had been the standard of voice music distribution throughout the Middle Ages and were retained in many geographical areas even after movable type printing began to rise. These large books were usually placed on a lectern for collective reading, with choristers typically gathering around the podium to read the music. Partbooks, on the other hand, could be more easily read individually or by smaller groups separated by voice type.

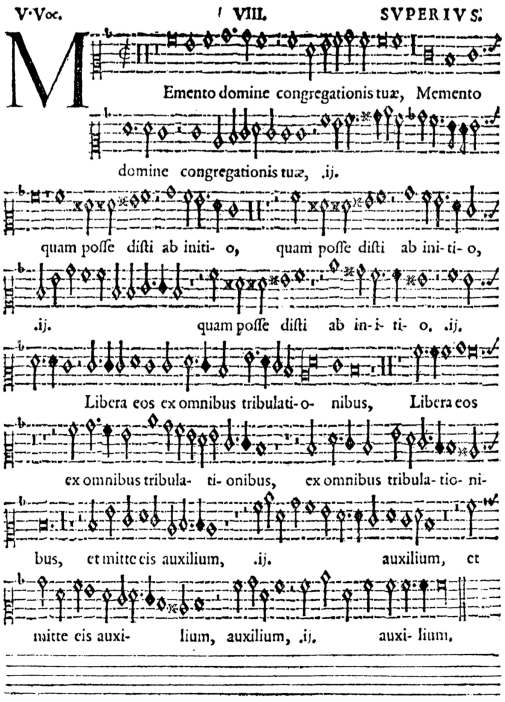


Figure 10: William Byrd – *Memento Domine congregationis tuae, Cantiones Sacrae I,* This Superius (top voice) partbook shows an independent part that occupies the entire page. Source: Byrd 1589, p. 8.

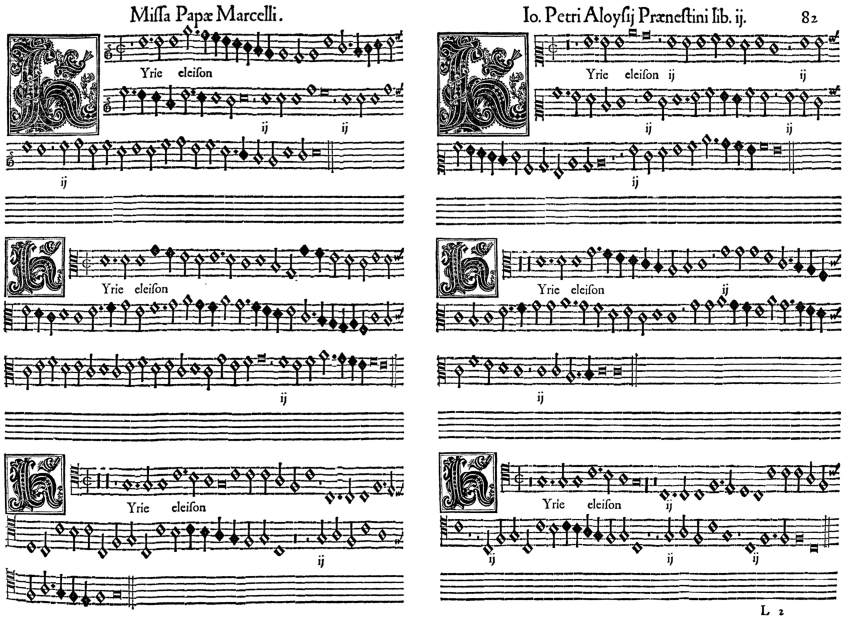


Figure 11: Giovanni Pierluigi da Palestrina – *Missa Papa Marcelli, Missarum Liber Secundus*. The choirbook shows all six polyphonic parts across two pages. Source: Palestrina 1599, p. 81v–82f.

In England, the gradual displacement of choirbooks by partbooks throughout the sixteenth century may have significantly impacted rehearsal practice, particularly as choral repertoire became increasingly complex vis-à-vis the refinement of contrapuntal rules. Since musicians did not have readily visual access to other parts, the employment of *musica ficta* may have been freer within melodic lines according to solmization standards. Thus, discussions of the impact of *mi–fa* practice (Benham 1977, p. 35–37; Duguid 2014, p. 132–135; Chan 2024, p. 183–196) on chromatic relations, both true and false, were compounded with the new performative challenges resulting from the popularization of partbooks.

This deliberate addition of sharps and flats to the melodic line compounds with accidentals intentionally marked by the composer in the notation. Hence, the summative performative totality generates true and FRs that reach beyond the composer's notation. In fact, it is possible to imply that the composer and editor may have left out accidentals that would have been already evident to the singer and could make additional *ficta* markings redundant or, perhaps, unnecessary. Printing errors were not uncommon, despite rigorous review in some cases. Ergo Chan's (2024, p. 185–187) conclusion, noting that to fully understand the impact of solmization on the creation of FRs, it is paramount to consider integrating the traditional vocal practice of the time with the notational convention.

Ultimately, chromatic relations in Renaissance music are a complex performative phenomenon that may be only available "on the stage", as it were, or at the performance moment itself. While Benham (1977), Duguid (2014), and Chan (2024) account for the impact of the popularization of partbooks, solmization, and canonic imitation on the addition of *musica ficta* to the polyphonic fabric, there are several factors concomitantly at play. In recapitulating the performative complexities impacting chromatic relations in this repertoire, the following five historically informed considerations are fundamental for the analysis of this music:

(1) The music notation itself.
(2) Hexachordal solmization practices stemming from Medieval tradition.
(3) The priority for canonic imitation, emulating similar intervallic relationships.

(4) Potential editorial inconsistencies.

(5) The added challenge of performing from individually printed parts.

For example, the list Richard Shakeshaft (Byrd 2021, p. i) provides in an edition of *De lamentation Jeremiae* contains fifty-five accidental changes, suggesting the vast consideration of editors in preparing scores. Of course, the accuracy of this preparation depends on the level of historicity on the editor's part. Therefore, the analysis of this music must feature as holistic a consideration as possible prior to methodological delimitations. In disclaiming the delimitations of the present study, for example, it is important to note that this article uses contemporary Urtext editions that prioritize the original propositions in original editions, with a heightened attention to the first edition and/or manuscript whenever they are available. It is important to recognize that the examples used here may have been affected by one or more of the historically informed considerations listed above. This article uses this delimitation due to myriad performative differences between various renditions of this work in the extant discography. Nonetheless, analysts can adapt this technical choice in future research to consider the performative totality more holistically.

6. Local Component: True Relations (TR)

In further exploring local components affecting the immediate harmonic context, another salient aspect of chromatic relations in this repertory is the composer's intentionality in employing TRs compared to FRs. This, once again, is particularly true of Byrd's polyphony. It may be inferred, at a first glance, that FRs would be employed intentionally as an alternative to TRs, yet the contrary can be argued since FRs are often more frequent than TRs in Byrd's music. Besides, FRs can be more recurrent than TRs despite the stylistic contempt toward the former (Solá Chagas Lima 2025, p. 16). While both have analogous strong rhetorical power as text highlighters, their auditory effect is distinguishable, especially in SFRs. On the one hand, SFRs are only possible as harmonically concurrent, naturally, and are harder to confuse with TRs, which comprise regular chromaticism within the same voice. On the other hand, AFRs and TRs are akin and feature asynchronous chromaticism, rather than simultaneously or synchronously. TRs seem, thus, to appear as an avoidance of FRs, especially in cadential contexts and around punctuations in the text (such

as periods, commas, and other natural breaks in the textual flow), and not the other way around.

In Byrd, TRs are particularly emphatic of textual punctuations/pauses and display a clear rhetorical function, such as tone painting on words of interest. Tab. 2 shows a comparative table of all dTRs in four motets by Byrd where TRs are recurrent and intentionally used alternatively to FRs.

Work	Measure Number	TR Type	Transfor-mation	Textual Connection	Tone Painting	Additional Comments
Tristitia et anxietas/Sed tu, Domine	Prima pars: m. 10	dTR	↓{P}	punctuational, with rest	"et anxietas"	——
Circumderunt me	m. 20	dTR	↓{P}	punctuational, with rest	"et pericula inferni"	——
	m. 34	dTR	↓{P}	punctuational, textual repetition	"invenerunt me"	——
	m . 43	dTR	↓{P}	non-punctuational	"dolorem inveni"	——
De lamentatione Jeremiae	m. 56–57	dTR	↓{P}	non-punctuational with resolution	"tetendit funiculum suum"	——
					"et non avertit manum suam"	
	m. 118	dTR	↓{P}	non-punctuational	——	——
	m. 181	dTR dAFR	↑{RP}	punctuational	"convertere"	combined with a dAFR
	m. 182	dTR dAFR	↑{RP}	non-punctuational	"convertere"	combined with a dAFR
Ne irascaris Domine/Civitas sancti tui	Prima pars: m. 22	dTR	↓{P}	punctuational	"iniquitatis"	——
Tribulatio proxima est/Contumelias et terrores	Prima pars: m. 17	dTR	↓{P}	punctuational	"sed tu, Domine"	——
	Secunda pars: m.	dTR	↓{P}	punctuational, with rest and textual repetition	"adjutor"	——

Table 2: Comparative table showing dTRs and transformations related to textual punctuation and tone painting in various motets by Byrd. Source: Author.

Moreover, as Tab. 2 shows, most chromatic relations in the five motets surveyed are closely related to negative meanings in the text, generally pointing to anxiety, sin, and suffering. Most of the TRs in the survey emphasized textual punctuations or line breaks, with the remaining TRs disconnected from the natural pauses of the text.

In a more general and casual survey of Byrd's motets, dTRs typically feature the transformation ↓{P} and are connected with a downward chromatic direction (↓). dAFRs, in turn, usually feature the transformation ↑{RL} and relate to an upward chromatic direction (↑). Tab. 3 does not give exact statistics, but shows a summary of the prevalence, considering the dialogue between chromatic direction and harmonic transformation (simple or compound). The two dTRs in *De lamentatione Jeremiae*, mm. 181 and 182, are the only exceptions to the frequent transformation ↓{P}, featuring instead the transformation ↑{RP}, perhaps due to their combination with a dAFR.

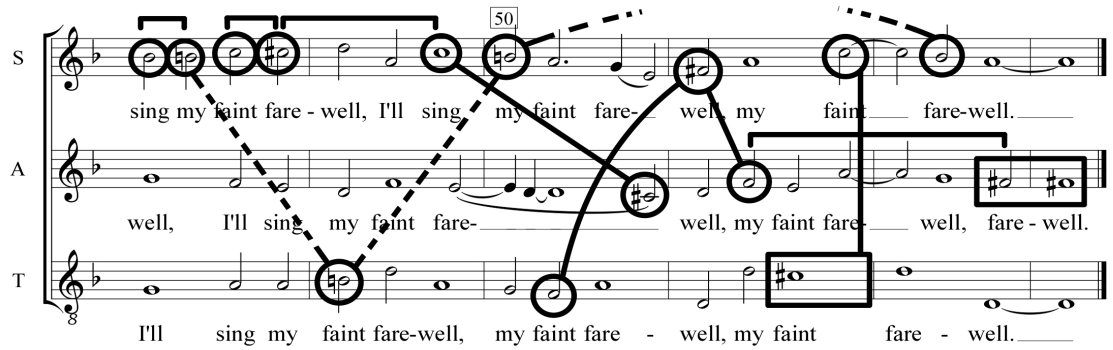
Chromatic Relation Type	Chromatic Direction	Transformation	Loose Statistic Prevalence
dTR	↑	{RP}	rare
dTR	↓	{P}	most prevalent
dAFR	↑	{P}	most prevalent
	↑	{RP}	uncommon
	↑	{RPR}	rare
	↑	{RL}	rare
dAFR	↓	{P}	most prevalent
	↓	{PR}	uncommon

Table 3: Summary of general statistical prevalence of chromatic relations in Byrd's music. Source: Author.

Future research on chromatic relations would benefit from a broader and comprehensive study of statistical incidence in the repertoire. Such a study would be particularly illuminating considering the nuances and variations in the employment of chromatic relations, as the analytical framework in Solá Chagas Lima (2025) and the present article begin to address. A longitudinal appraisal of chromatic relations reaching beyond Byrd's music and surveying Renaissance

repertoire at large, including the works of other sixteenth-century composers in and outside England, would also be a welcome addition to the scholarship.

For instance, Thomas Weelkes's motet, *Cease sorrows now*, is an excellent example of the intentional use of extensive chromaticism within the same voice (TRs). Several dTRs precede the conspicuous SFR in m. 51. The motet has several chromatic relations, and Weelkes employs two chromatic alterations in a row (e.g., F – F-sharp – G – G-sharp), creating a distinct melodic line which other voices imitate until the end of the motet. Ex. 6 shows the last iteration of this ascending chromatic line (B-flat – B – C– C-sharp) in m. 48.



Example 6: Thomas Weelkes – *Cease sorrows now*, mm. 48–53. Source: Weelkes 2017, with author's annotations.

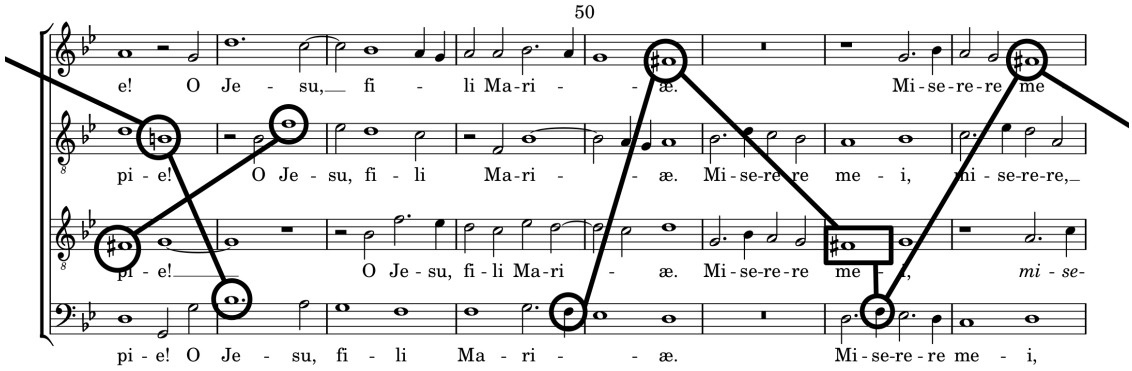
This deliberate use of juxtaposed dTRs followed by an SFR suggests an awareness of their interchangeable, analogous function as rhetorical devices but, at the same time, a consciousness of their individual effects as discrete theoretical devices. Unlike the dTRs in Byrd's examples above, the first dTR in Weelkes's m. 48 occur within a ↑{P} transformation (minor-major) rather than ↓{P} (major-minor), having an analogous mode-changing role but with an additional differentiated auditory quality to the same-voice chromatic element. The second ascending chromaticism of m. 48 entails a {L-P} transformation—where the C-natural belongs to the F major triad and the ensuing C-sharp to the A major triad, thus avoiding the direct parallelism and creating a diferente effect.

7. Local Component: Immediate and Delayed Concurrence in SFRs

The local component discussed in this section concerns variations in the concurrence of chromatic pitches involved in synchronous false relations (SFR).

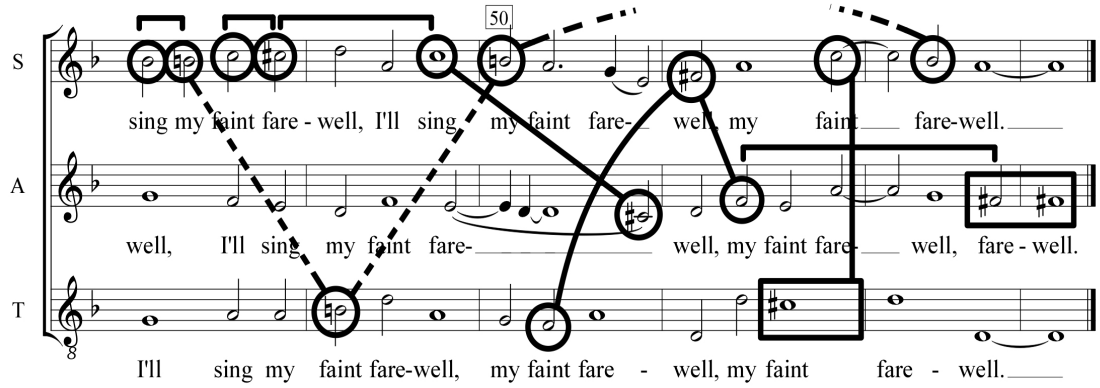
The chief definition of SFR as a subset of false relations is the temporal synchronicity of the chromatic pitches in different voices (Solá Chagas Lima 2025, p. 19–21). Yet, an additional distinguishing factor in the way SFRs present depends upon whether this temporal and, therefore, harmonic concurrence of pitches in different voices is immediately achieved or delayed (deferred). In other words, the two chromatic pitches in the SFR may or may not start and end simultaneously. This article focuses on the "achievement" of SFR, as it were, the moment at which the pitches concur, exploring whether the concurrent chromatic pitches *begin* together or whether one of the pitches delays "coming in".

Ex. 7 has an example of delayed SFR from Byrd's *Ave verum corpus* (1605), where the second pitch of the false relation is slightly deferred (m. 52). When Byrd introduces the F-natural in the Bass, the F-sharp is still sounding in the Tenor, thus creating an SFR, by definition, despite the brief delay or postponement of the chromatic friction itself.



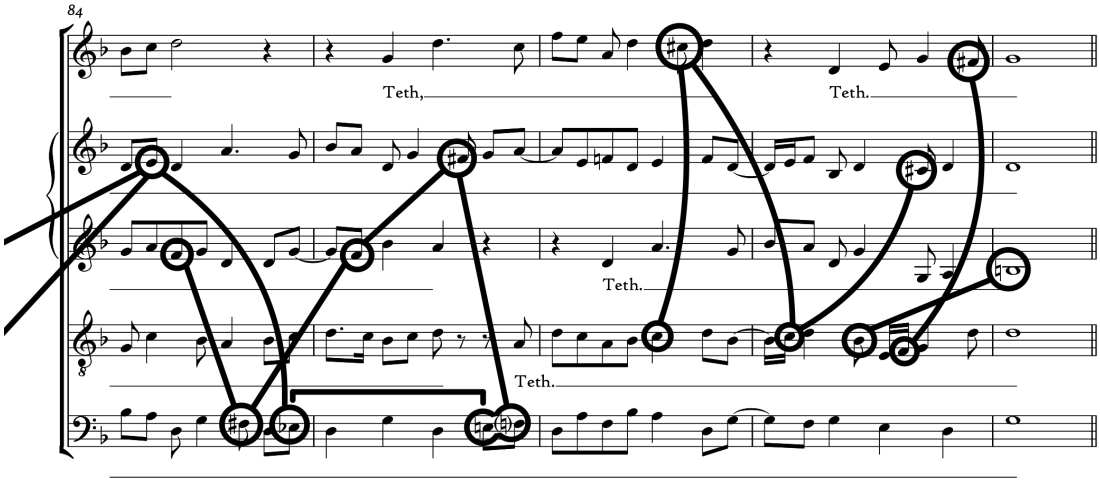
Example 7: William Byrd – *Ave versus corpus*, mm. 46–53. Source: Byrd 2023a, with author's annotations.

Another example is the SFR at the end of Weelkes's *Cease sorrows now* (Ex. 8, m. 51), which is particularly evident as it follows several TRs and FRs. In this example, Weelkes writes a C-natural in the Soprano, on a weak beat and the end of the measure, which clashes with the cadential C-sharp, which the Tenor introduces in the middle of the measure, thus generating a delayed SFR.



Example 8: Thomas Weelkes – *Cease sorrows now*, mm. 48–53. Source: Weelkes 2017, with author's annotations.

A third example of delayed SFR appears in *De lamentatione Jeremiae* (Ex. 9, m. 86). The C-sharp in the top voice (also introduced in a *mi–fa* cadential fashion) clashes with the already sounding C-natural in the Tenor part, creating a delayed SFR.



Example 9: William Byrd – *De lamentatione Jeremiae*, mm. 84–88. Delayed SFR ↑{P} in m. 86 (C – C-sharp). Source: Byrd 2021, with author's annotations.

Byrd's *O salutaris hostia* is famed for its recurring SFRs. Chan (2024, p. 287–296) analyzes this motet, pointing out the instances of FR without making this distinction between these iterations. This motet is particularly significant for its SFRs, rather than AFRs in general. The insistent harmonic simultaneity/concurrence of chromatic pitches is jarring (2024, p. 193). This type of synchronous concurrence affects the intensity of the dissonance, rendering each of these instances unique against the motet's overarching backdrop. Tab. 4

assesses each SFR in this motet, which features an almost equal distribution of immediate and delayed SFR iterations.

Measure Number	Immediate Concurrence	Delayed Concurrence
m. 9		x
m. 10		x
m. 12		x
m. 14		x
m. 14	x	
m. 18	x	
m. 23		x
m. 26	x	
m. 27	x	
m. 30		x
m. 31	x	
m. 33		x
m. 33	x	
m. 36 (x2)		x
m. 37	x	
m. 38		x
m. 39 (x2)		x
m. 39	x	
m. 47	x	

Table 4: William Byrd - *O salutaris hostia*. Distribution of immediate and delayed SFRs in the motet. Source: Author.

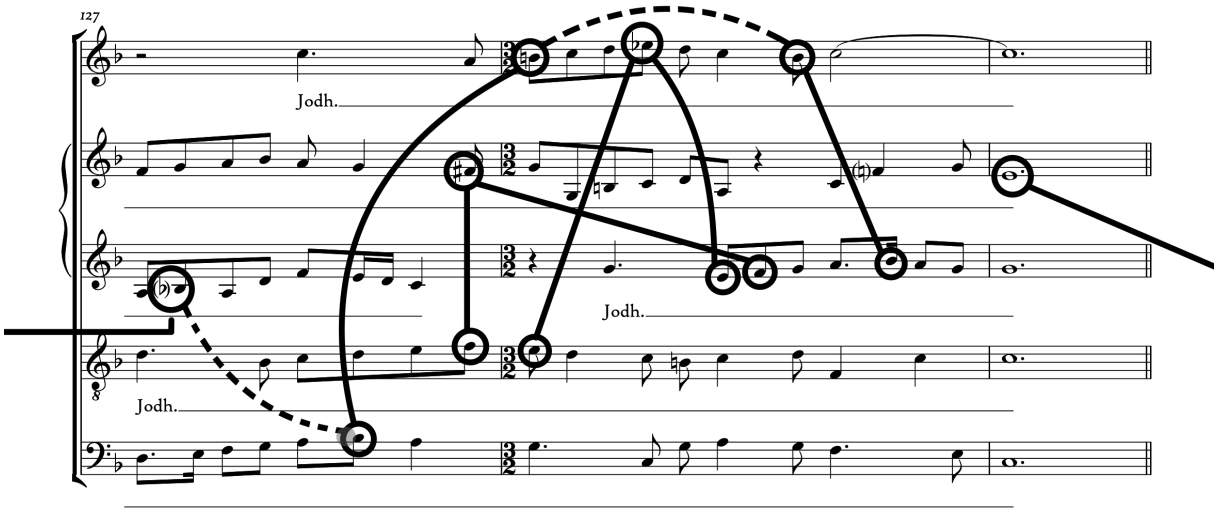
8. Global Component: Addition of Non-Chordal and Chordal Tones to Chromatic Relations

The altered pitches participating in chromatic relations are frequently part of a longer melodic line and may, therefore, interact with adjacent tones in the form of dissonances (non-chordal tones) or consonances (chordal tones). While these adjacent tones may not be directly involved in the chromatic relations, their interaction with the chromatic pitches is worth considering. Additionally, the chromatic relation's pitch pair may take place in weak or strong beats, thus affecting the overall quality of the chromatic relation itself. The following two subsections explore this multifaceted interaction of chromatic relations with adjacent melodic tones.

8.1. Non-Chordal Tones and Chromatic Relations

Chromatic alterations may occur in pitches that do not belong to the triadic harmony at hand in the form of dissonances (passing notes, non-chordal tones, etc.), chiefly on weak beats. Although there is less auditory evidence than their downbeat counterparts, the sonic effect of chromaticism in weak beats remains significant in the overall texture and may generate FRs against other voices. These are particularly relevant from a theoretical and performative standpoint, due to their potential involvement in chromatic relations.

In defining analytical criteria that align with Renaissance contrapuntal standards, it is valuable to consider the participating pitches in the triadic harmony as the primary candidates for melodic connection. Non-chordal tones are, in essence, borrowed from other, non-principal triadic contexts. Ex. 10 shows a passage from Byrd's *De lamentatione Jeremiae*, which contains an SFR between an F and an F-sharp.



Example 10: William Byrd – *De lamentatione Jeremiae*, mm. 127–129. Source: Byrd 2021, with author's annotations.

The F-sharp/F-natural SFR may be interpreted as a borrowed non-chordal tone in the context of the A minor harmony. In lieu of the E, which belongs to A minor harmony, the music features a false relation occurring on the concurrent passing tones F-sharp/F-natural. The result is a diminished triad (F-sharp – A – C) which coexists with an F major triad (F-natural – A – C). This relationship is illustrated in Fig. 12.

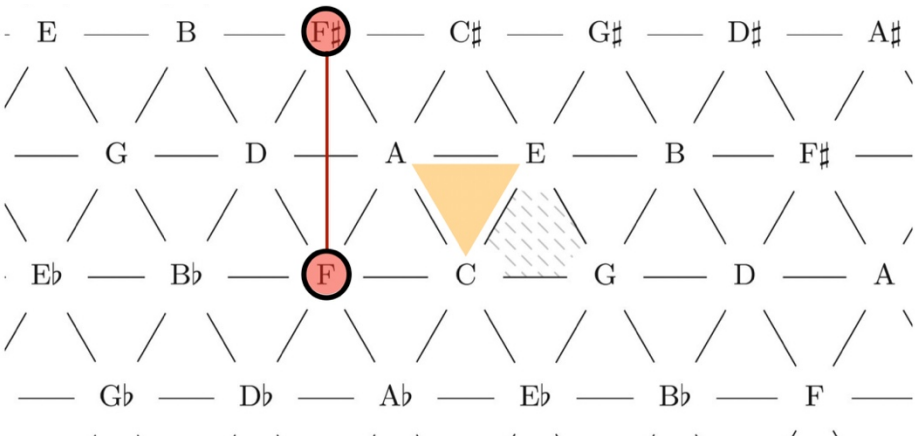
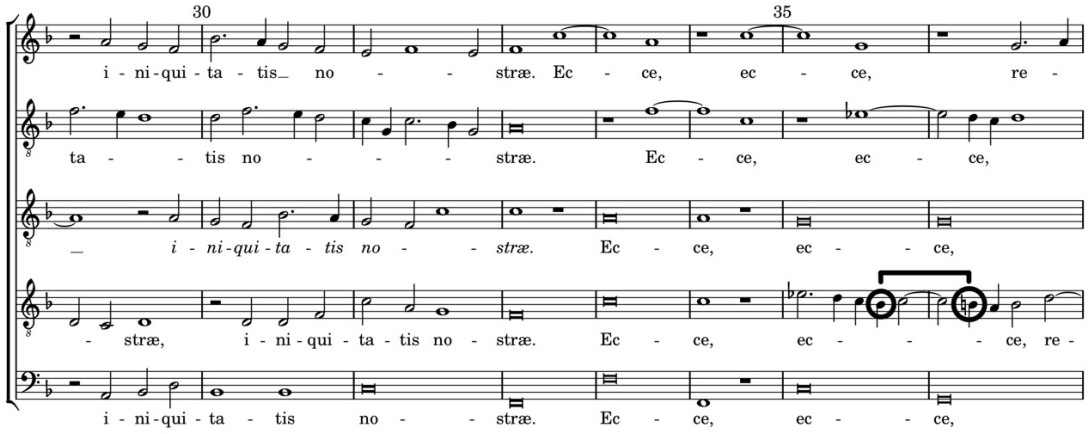


Figure 12: William Byrd – *De lamentatione Jeremiae*, m. 127. SFR within a diminished triadic harmony. Source: Author.

It is also fit to contemplate chromatic pitch pairs' varying rhetorical function (Bartel 1997; Chan 2024; Solá Chagas Lima 2025) depending on their participation in the triadic harmony, either as consonant or dissonant notes. Non-harmonic tones on weak beats may result in a likewise weakening or "watering down" of the false relation. It may also be argued that they may detract from the false relation effect when occurring on weak beats or weak portions of the beat, such as passing notes. Ex. 11 demonstrates such an instance in Byrd's *Ne irascaris Domine/Civitas sancti tui.*



Example 11: William Byrd – *Ne irascaris Domine/Civitas sancti tui*, mm. 29–36. iTR in mm. 35–36. Source: Byrd 2022 *apud* Solá Chagas Lima 2025, p. 37.

The chromaticism of the iTR B-flat – B, in the Tenor part (m. 35–36), is less conspicuous due to the interspersed C suspension. Tab. 5 lists further (yet non-

exhaustive) examples of the employment of non-chordal tones among chromatic relations in the works surveyed in this study. As the table shows, non-chordal notes can *be added to the chromatic pitches* in the chromatic relations or can *be the chromatic pitches themselves*. In other words, either of the two pitches in any chromatic relation can be consonant or dissonant.

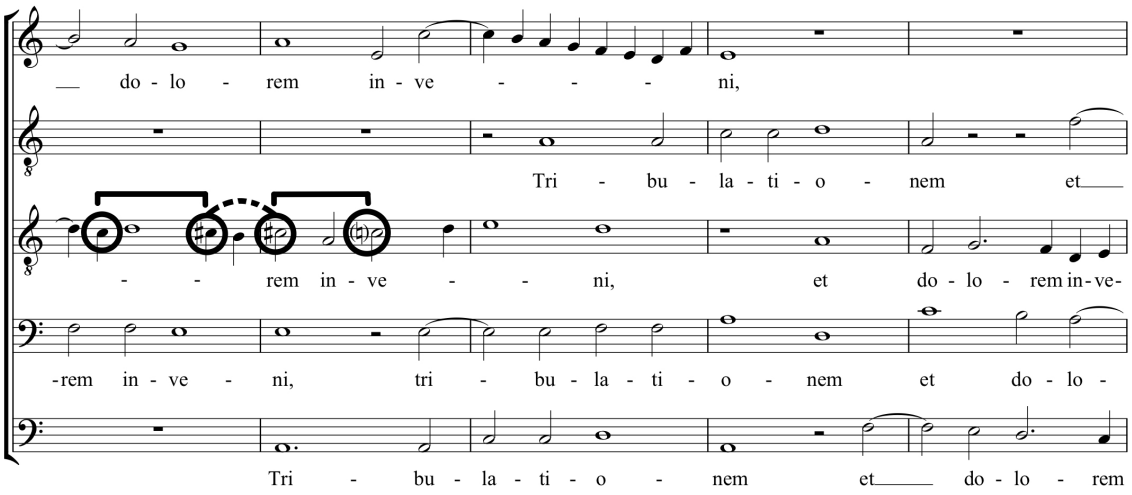
Work	**Measure Number**	**Chromatic Relation**	**Transformation**
Tristitia et anxietas/Sed tu, Domine			
	m. 31	dAFR	The first pitch *is followed by* a non-chordal tone.
Prima pars:	m. 112	dAFR	The first pitch *is followed by* a non-chordal tone.
	m. 19	iAFR	The second pitch *is* a suspension resolution.
Secunda pars:	m. 26	iAFR	The second pitch *is* a non-chordal tone.
Afflicti pro peccatis nostris/Ut eruas nos a malis			
	m. 18	dAFR	
Prima pars:	m. 48	iTR	The second pitch *is* a suspension resolution.
	m. 48	dAFR	The first pitch *is* a non-chordal tone, and the second *is* a suspension resolution.
	m. 56-57	dTR	The first pitch *is followed by* a non-chordal tone.
De lamentatione Jeremiae			
	m. 94	dAFR	The first pitch *is* a suspension resolution and *is followed by* a non-chordal tone.
Tribulatio proxima est/Contumelias et terrores			First pitch *is followed by* a non-chordal tone

Table 5: Examples of non-chordal tone involvement in chromatic relations. Source: Author.

8.2. Chordal Passing Tones and Chromatic Relations

Occasionally, non-dissonant passing tones (or a "bounce") between pitches belonging to a triadic harmony may occur, thus resulting in direct chromatic relations (i.e., dTR or dAFR), since they do not alter the base harmonies. This criterion, too, is a deliberate analytical choice—one that contemplates melodic relations as primarily dependent upon and, at least in

some cases, contingent on harmonic connections. Ex. 12 shows a non-dissonant passing tone in the context of a chromatic relation.



Example 12: William Byrd – *Circumderunt me*, m. 43. dTR {P}. Source: Byrd 2008b, with author's annotations.

The A in the dTR in m. 43, which occurs between the C-sharp and C-natural, entails a "bounce" onto a pitch within the same harmony (A major triad), rather than a non-chordal tone. Therefore, this chromatic relation would qualify as a dTR since non-chordal tones do not affect the {P} transformation. As per Solá Chagas Lima's (2025, p. 25–27) proposition, the dotted line connecting the C-sharps in mm. 42–43 indicates a prolongation of the *musica ficta* over a short passage of music (in this case), so that the three-pitch unit in the two chromatic relations "to" and "from" the *ficta* is satisfied in the diatonic context.

9. Global Component: Compound Relations (Framed and Superimposed)

TRs and FRs can also cluster around niches featuring heightened chromatic activity. These niches may or may not be modulatory, often featuring several temporary harmonic centres, which dissolve as new chromaticisms are introduced. In a survey of Byrd's music, there are at least two main ways in which chromatic relations nest together forming compound relations, namely, in the form of (1) framed and (2) superimposed or "chained" chromatic relations. Compound chromatic relations enhance the rhetorical effects discussed in Bartel

(1997), Chan (2024), and Solá Chagas Lima (2025). The two subsections below explore these interactions in more detail, showcasing the melodic disposition of these combined relations and the harmonic transformations they entail.

9.1. Framed Chromatic Relations { [ ] }

Framed chromatic relations usually involve two chromatic relations. One of the two envelops the other. This close proximity sometimes occurs due to a need to "tonicize" a harmony—to borrow a term and concept from tonal harmony. As suggested above, these may be involved in a larger and ongoing modulatory space or entail a brief "dwelling" in an alternative harmonic context. Fig. 13 exemplifies framed chromatic relations, showcasing three possible instances. The numbers (1–4) in the horizontal line above each of the three scenarios in Fig. 13 indicate the temporal sequence of pitches involved in the chromatic relation. The alphabetical letters (A–D) in the vertical line beside each of the three scenarios indicate polyphonic voices in the order they appear in the score.

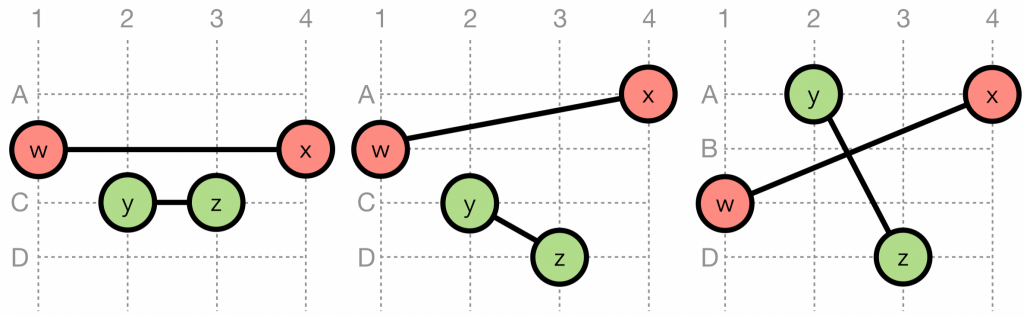
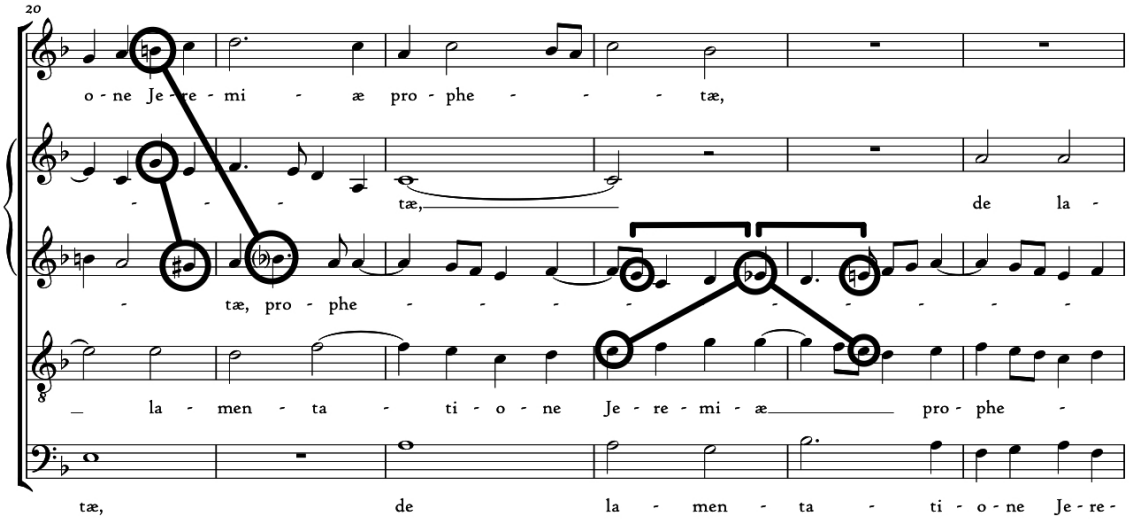


Figure 13: Three similar examples of framed chromatic relations in a four-part polyphonic texture (voices A, B, C, and D), chromatic pitches 1 and 4 encompass chromatic pitches 2 and 3. Source: Author.

The hypothetical scenarios contain possible combinations of chromatic relations. The first instance in Fig. 13 shows a TR encompassing or framing another TR. The second shows a similar scenario, now involving two AFRs. The third instance depicts two AFRs, with the addition of a larger textural crossing. The latter may occur when chromatic pitches occur across two voices in different octaves (Solá Chagas Lima 2025). Therefore, the visual "crossing" of voices in the

analysis of chromatic relations differs from that of the contrapuntal/polyphonic notion of voice crossing.

Ex. 13 is an example, from Byrd's *De lamentatione Jeremiae*, of a framed chromatic relation involving two FRs, where an iAFR (B – B-flat) frames a dAFR (G – G-sharp).



Example 13: William Byrd – *De lamentatione Jeremiae*, mm. 20–25. Source: Byrd 2021, with author's annotations.

In a *Tonnetz*-based analysis of the harmonic progressions involved, this article uses two types of brackets to differentiate between chromatic relations. In the framed relations analyzed in this article, the "larger", fram*ing* chromatic relation is labeled within "{}" brackets, and the "smaller", fram*ed* chromatic relation, in "[]" brackets. In the example, the smaller dAFR [P] is framed within the larger iAFR {P – LRPRP – L}, which also reads as {[P] – LRPRP – L}.

Fig. 14 and 15 show the two FRs embedded in the harmonic progression E minor, E major, D minor, B-flat major, which does not account for chord inversions but shows the modal trajectory between these chromatic pitches.

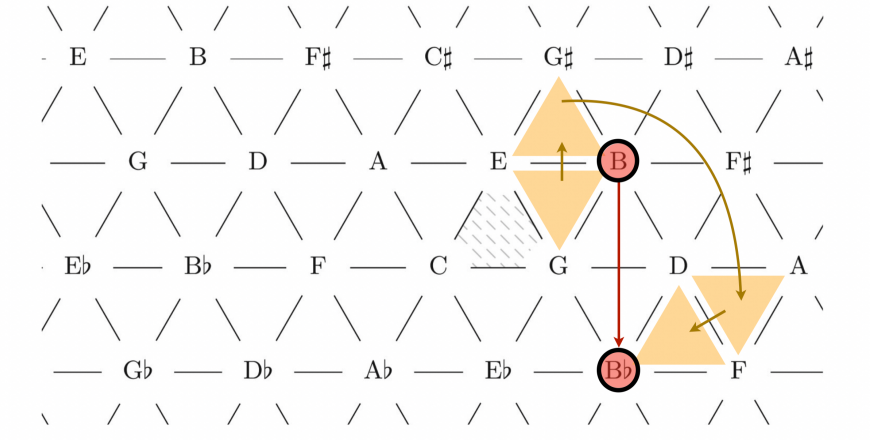


Figure 14: William Byrd – *De lamentatione Jeremiae*, mm. 20–21. *Tonnetz* model showing framing iAFR **{P – LRPRP – L}**. Source: Author.

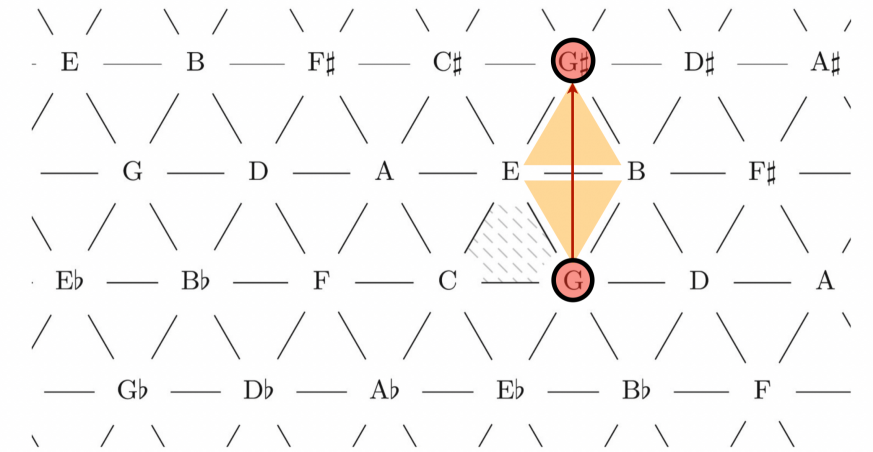
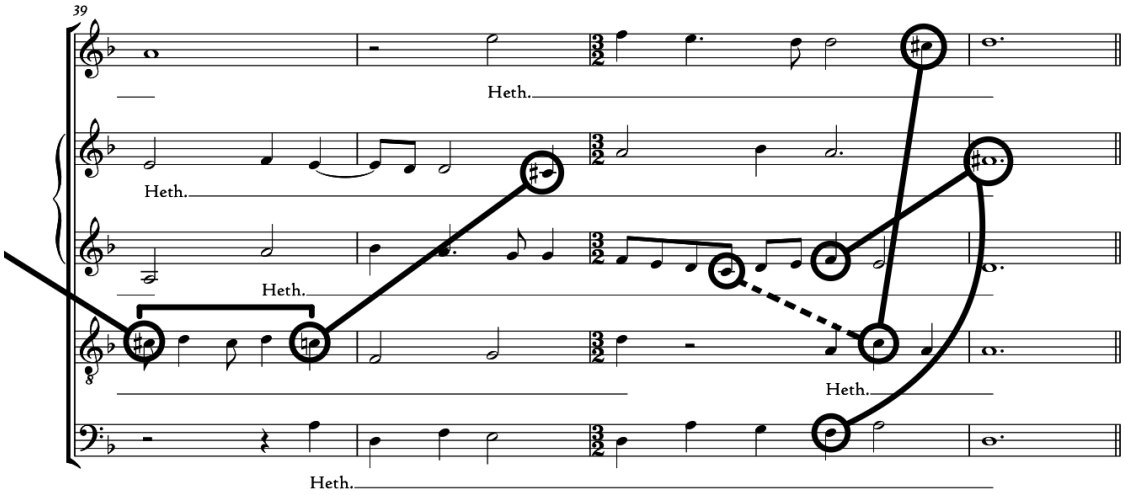


Figure 15: William Byrd – *De lamentatione Jeremiae*, mm. 20–21. *Tonnetz* model showing Framed dAFR **[P]** or {**[P]** – LRPRP – L}. Source: Author.

The iAFR {P – LRPRP – L} is embedded in the longer, framing progression (E minor, E major, D minor, B-flat major) and the dAFR [P] is embedded in the shorter, framed progression (E minor, E major).

Ex. 14 contains another example of a framed relation in Byrd's *De lamentatione Jeremiae*. The scenario is analogous to the alternative example above, albeit with a simpler harmonic trajectory.



Example 14: William Byrd – *De lamentatione Jeremiae*, mm. 39–42. Source: Byrd 2021, with author's annotations.

In this example, the dAFR [P] is also framed within a longer iAFR {RL – P – RL}, which also reads as {RL – [P] – RL}. The parallel transformation is, thus, embedded in the longer set of transformations shown in Fig. 16 and 17.

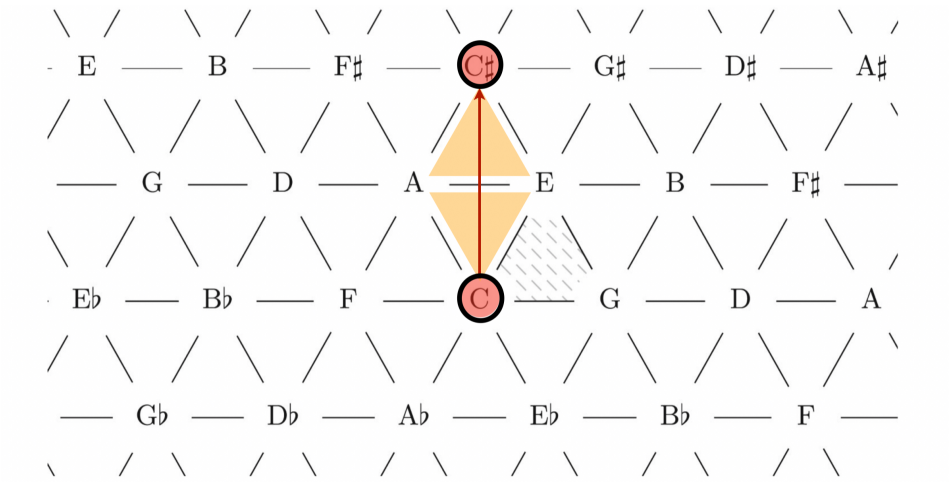


Figure 16: William Byrd – *De lamentatione Jeremiae*, mm. 41–42. *Tonnetz* model showing framed dAFR {RL – **[P]** – RL}. Source: Author.

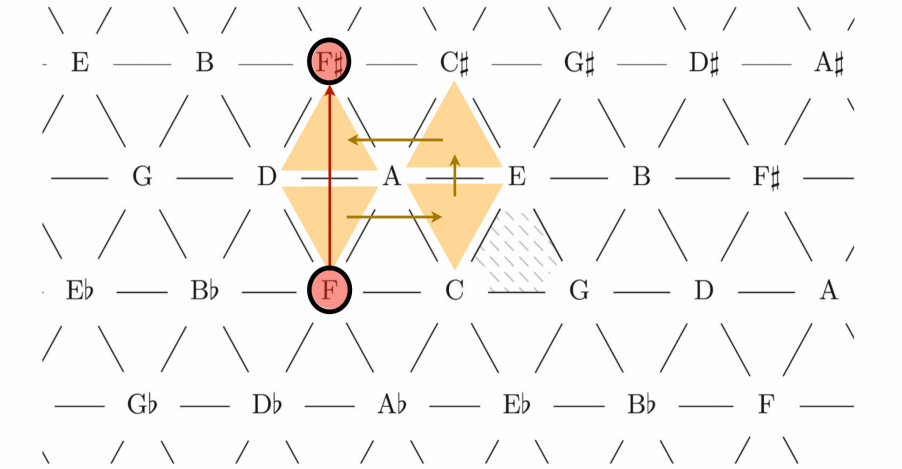
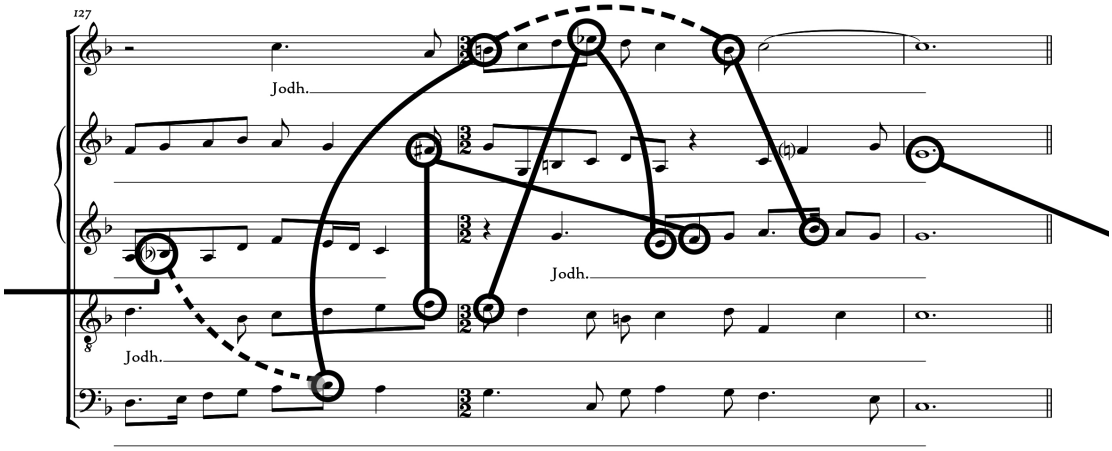


Figure 17: William Byrd – *De lamentatione Jeremiae*, mm. 41–42. *Tonnetz* model showing Framing iAFR **{RL – P – RL}**. Source: Author.

The same motet also has an instance of a framed SFR, which appears within an iAFR (Ex. 15). The B-flat to B-natural iFR between the Bass and top voice encompasses the F-natural and F-sharp SFR. The pitches in the latter FR participate in a diminished triadic harmony that also poses a deviation from the *Tonnetz* major-minor model as illustrated above (Fig. 12).

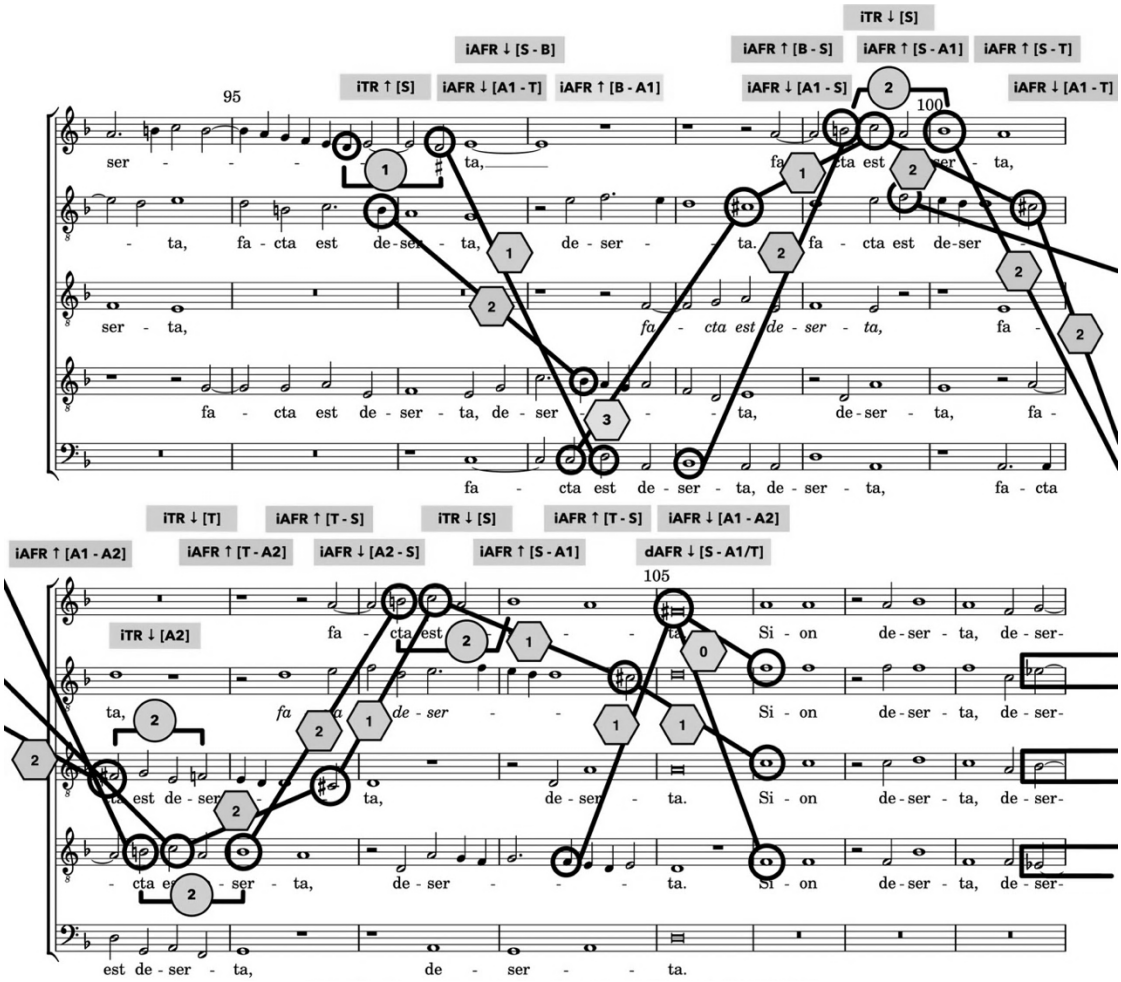


Example 15: William Byrd – *De lamentatione Jeremiae*, mm. 127–129. Source: Byrd 2021, with author's annotations.

9.2. Superimposed chromatic relations { [}]

These compounded relations are similar to framed relations in that they involve at least two chromatic relations. In this case, however, the chromatic relations are interlaced, rather than contained in one another. In analyzing

superimposed relations, this article labels one of the chromatic relations within "{}" brackets and the other in "[]" brackets. Solá Chagas Lima (2025, p. 40) presents an especially complex instance of superimposed chromatic relations, identifying an array of variants involved in the passage, such as iTRs, iAFRs, and one dAFR (Ex. 16). This passage shows that various iterations of the chromatic relation can coexist, creating a heightened rhetorical underscoring of the text, which talks about the destruction of Jerusalem.



Example 16: William Byrd – *Ne irascaris Domine/Civitas sancti tui*, mm. 94–108. Various superimposed chromatic relations. Source: Byrd 2022 *apud* Solá Chagas Lima 2025, p. 40.

Fig. 18 exemplifies a few hypothetical scenarios of superimposed relations. The first scenario in Fig. 18 depicts two superimposed TRs. The second shows two superimposed AFRs. The third also depicts two superimposed AFRs, albeit with chromatic pitches potentially in different octaves, thus creating larger textural crossings.

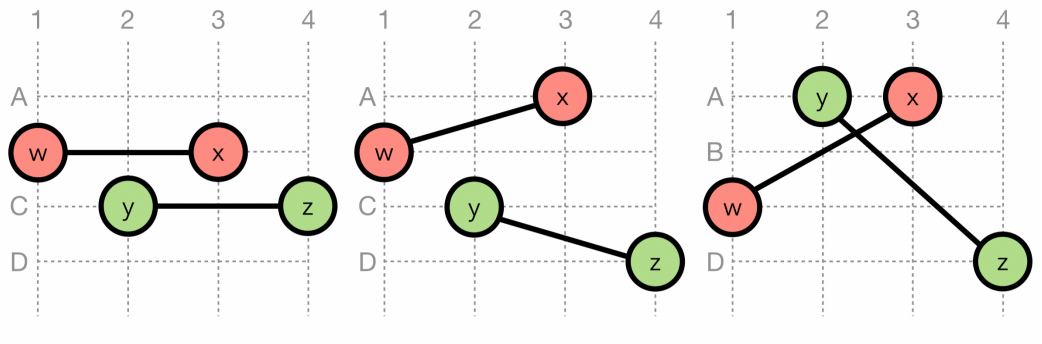
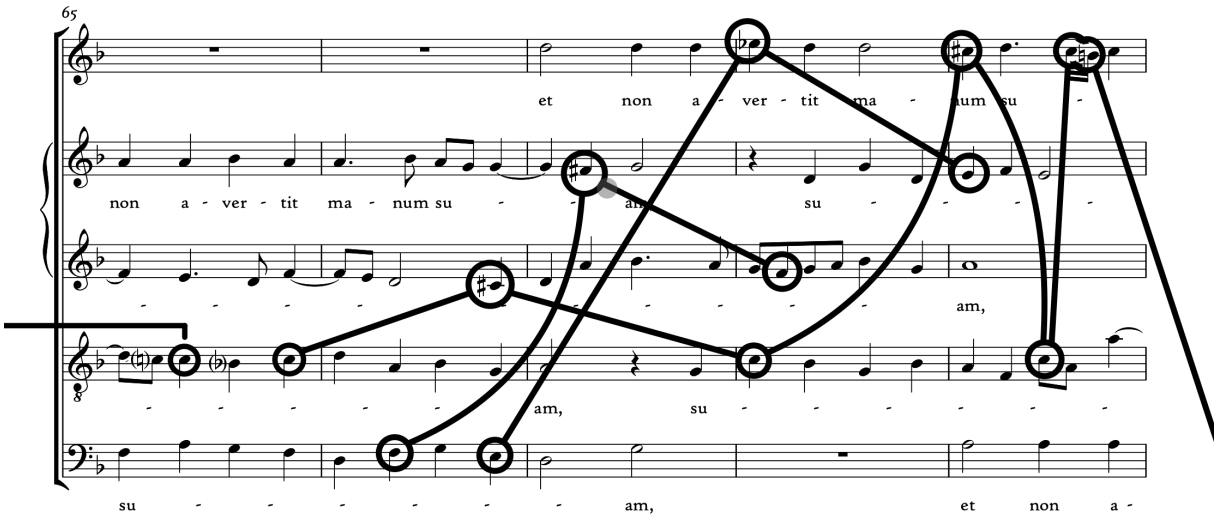


Figure 18: Three similar examples of superimposed chromatic relations in a four-part polyphonic texture (voices A, B, C, and D), wherewith chromatic pitches 1 and 3 are interspersed with chromatic pitches 2 and 4. Source: Author.

The latter instance occurs in *De lamentatione Jeremiae*, mm. 65–69 (Ex. 17)—a passage featuring four superimposed chromatic relations that involve the participation of all five voices in the complex polyphonic fabric.



Example 17: William Byrd – *De lamentatione Jeremiae*, mm. 65–69. Source: Byrd 2021, with author's annotations.

10. Concluding Thoughts

This article has provided additional analytical terminology and a classificatory framework for nuances not yet discussed in extant literature. The article is not exhaustive, however. In distilling further qualities of chromatic relations, it addressed local and global components of chromatic relations in the

English late-Renaissance repertoire that help understand them as complex compositional devices requiring a theoretical definitional investigation beyond their music-historical, rhetorical manifestation. In complementation of Chan's (2024) and Solá Chagas Lima's (2025), semiotic-historical and theoretical approaches, respectively, this article continues to refine the understanding of chromatic relations, true and false, in a repertoire in which the use of chromaticism is occasional, albeit intentional.

It is paramount to remember that the implications of chromatic mannerisms in the English repertoire of this time may apply to other repertoires, both diachronically, in the historical sense, and geographically, in that many of these mannerisms were culturally confined. The delimitation of the present study to the late Renaissance is, thus, yet another deliberate choice for the researcher to demonstrate the theoretical features of this compositional device. In other words, it is a means for initial explorations that remain open-ended and need further investigation in adjacente and non-adjacent repertoires.

The propositions in this article have ample application to analogous repertoires inside and outside this musical tradition. While scholarship has pointed to chromatic false relations in pre-Renaissance repertoire (Solá Chagas Lima 2025, p. 13), a comprehensive analysis of this compositional device in subsequent repertoires may reveal a significant role that reaches beyond Renaissance and Baroque music. This documentational endeavour may prove especially fruitful in the context of complex harmonic exchanges in tonal and post-tonal music, considering the allusions to false relations in post-Classical theoretical documents. These may, once again, warrant a thorough appraisal of terminological inconsistencies discussed in Solá Chagas Lima (2025), with an application to the specific repertoire at hand.

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